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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/419,620	10/15/1999	JONG WOOK PARK	0465-0716P	1535

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EXAMINER

NGUYEN, DUNG T

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 08/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/419,620

Applicant(s)

Park

Examiner

Dung Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 3 6) ☐ Other:

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DETAILED ACTION

Drawings

1. Figures 1-2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

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The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1, 2, 10 and 14-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Applicant's admitted prior art (APA).

The above claims are anticipated by APA which disclose a method of forming a liquid crystal display (LCD) comprising the step of forming a LCD cell and heating the LCD cell (specification, page 3, lines 4-12). Furthermore, the heating step ($t=100^{\circ}\text{C}$)(specification, page 3, line 8) is performed at the temperature that is less than a curing temperature of the sealant ($t=180^{\circ}\text{C}$)(specification, page 8, line 4). It should be noted that the step of forming an alignment layer, sealant, laminating and injection a liquid crystal layer would be inherent to the step of forming the LCD cell.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made

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to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-7, 9, 11-12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (APA).

Regarding claims 3-7, 9 and 11, APA disclose the claimed invention as described above except for the heating temperature and based material for the alignment layer. One of ordinary skill in the art would have realized the desire to form a polyimide based material or photo-alignment material (e.g., polysiloxane) for an alignment layer depending on the method of forming such alignment layer (i.e, rubbing or lighting). As a result, the heating temperature would be follow on such alignment material (low heating temperature, e.g. 100° C, for rubbing method and/or high heating temperature, e.g. greater than 170° C for lighting method).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to heat an LCD cell at a predetermine temperature as well as to use a polyimide based for the rubbing alignment layer and polysiloxance based material for the lighting alignment layer because it is a common practice in the art to perform a stable alignment layer in the LCD cell.

Regarding claims 12 and 16, although APA fail to disclose the heating step being performed at a temperature is greater than about 10° C above a nematic isotropic transition temperature, APA do disclose that the LCD cell is heating at a temperature higher than a nematic isotropic transition temperature (specification, page 3, line 5). Therefore, such disclosed range in APA makes possible the claimed range of greater than about 10° C above a nematic isotropic

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transition temperature, and overlapping ranges are at least obvious. In re Malagari, 499 Fed.2d 1297, 182 USPQ 549 CCPA 1974.

7. Claims 8, 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (APA), in view of Applicant's submitted prior art, Katsuto, JP 5-323324 and Mishina et al., US Patent No. 5,954,999.

Regarding claim 8, APA disclose the claimed invention as described above except for the step of quickly cooling the LCD cell. Katsuto does disclose a LCD element is immediately plated flat on the surface of a rapid cooling plate to rapidly cool the LCD element from the heating temperature (see abstract). Therefore it would have been obvious to one skilled in the art to rapidly cool an APA's LCD cell from a heating temperature as shown by Katsuto in order to enable the efficient and easy reorientation of a liquid crystal layer (see purpose).

Regarding claims 13 and 17, APA disclose the claimed invention as described above except for the heating step is performed at a temperature which is substantially equal to a baking temperature of the alignment layer. Mishina disclose a baking temperature of the alignment layer can be selected from -5° C to 100° C (col. 4, line 58). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to bake an alignment layer at 100° C as shown by Mishina, so as the heating temperature of the APA's LCD cell is substantially equal to a baking temperature of the alignment layer in order to product a liquid crystal alignment film which has a high tilt angle and excellent in electrical properties of LCD devices (see Technical Field).

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Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Dung Nguyen whose telephone number is (703) 305-0423. The fax phone number for this Group is (703) 746-7730.

Any information of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 308-0956.

DN
08/22/2002


William L. Sikes
Supervisory Patent Examiner
Group 2871